

PARAFUSCOPTILIA: A NEW GENUS OF PLUME MOTHS (LEPIDOPTERA: PTEROPHORIDAE) FROM CHINA¹

Shu-Lian Hao² and Hou-Hun Li^{2,3}

ABSTRACT: A new genus, *Parafuscoptilia* gen. nov. in the Pterophoridae is established. The type species, *Parafuscoptilia tubuliformis* sp. nov., is described based on specimens collected in Fujian, China. The adult as well as male and female genitalia are illustrated.

KEY WORDS: Lepidoptera, Pterophoridae, *Parafuscoptilia*, new genus, new species, China

***Parafuscoptilia* gen. nov.**

Type Species. *Parafuscoptilia tubuliformis* sp. nov.

Description. Head (Fig. 2) with appressed scales, without frontal tuft; scales on vertex porrect or slightly reclinate. Labial palpi porrect, about twice length of eye diameter. Cervix with numerous dispersed erect scales.

Wings. Forewing (Fig. 3) cleft from $3/5$ to $2/3$, lobes with slightly concave outer margin, apex moderately pointed. Sc reaching $2/5$ costal margin; R_1 absent, R_2 free, R_3 stalked with R_4 , R_4 nearly reaching apex of first lobe, R_5 reaching inner margin at about $3/5$ length of first lobe; M_3 reaching apex of second lobe; Cu_1 from $1/3$ of M_3 in second lobe, Cu_2 from before angle of cell. Hindwing (Fig. 3) cleft from $1/2$ and $1/5$; first lobe evenly narrow; second lobe with outer margin somewhat concave; third lobe evenly narrow, without "scale tooth." Sc+ R_1 reaching $1/2$ costal margin, third lobe with only one vein.

Abdomen short and small.

Male genitalia: Uncus nearly trapezoidal, sclerotized. Tegumen broad, with distal portion tube-like. Valvae symmetrical, tapering distally. Anellus absent, but manica present. Aedeagus stubby, spinous.

Female genitalia: Apophyses posteriores slender; apophyses anteriores short and broad. Ostium and antrum centrally positioned. Corpus bursa without signum, but with spinules.

Differential Diagnosis. *Parafuscoptilia* gen. nov. is characterized by the male genitalia with the distal portion of the tegumen tubiform, the uncus nearly trapezoidal, and the valva tapering distally. The new genus is most similar to *Fuscoptilia* Arenberger (1991) (Arenberger, 1991; Gielis, 1993, 2003; Ustjuzhanin, 1996), but can be distinguished from the latter by the following characters: R_1 of the forewing is absent in *Parafuscoptilia* gen. nov., but present in *Fuscoptilia*; Sc+ R_1 of the hind wing in *Parafuscoptilia* extends to $1/2$ of costal margin, while it nearly reaches the apex of the costal margin in *Fuscoptilia*; the uncus is nearly trapezoidal in *Parafuscoptilia*, but somewhat rectangular or spherical in *Fuscoptilia*; the valva is tapering distally and pointed at apex in *Parafuscoptilia*, but broad and rounded at apex in *Fuscoptilia*; the basal section of the aedeagus is simple in *Parafuscoptilia*, but bifurcated in *Fuscoptilia*; the

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² Department of Biology, Nankai University, Tianjin 300071 China. E-mails: SLH, haoshulian@126.com; HHL, lihounhun@nankai.edu.cn.

³ To whom correspondence and reprint requests should be addressed.

corpus bursa is small and bears numerous fine spines on the inner surface in *Parafuscoptilia*, while it is very large and does not possess spines in *Fuscoptilia*.

Remarks. The tubiform distal portion of the tegumen in *Parafuscoptilia* is not found in other Pterophoridae. The tapering distal section of the valva in *Parafuscoptilia* can also be found in *Antarches* (Gibeaux, 1994) and *Megalorhipida* (Gielis, 1993, 2003; Gibeaux, 1994), but the new genus can be separated from them by the simpler, not S-shaped, valva and the slender aedeagus. In general, the manica is absent in Pterophoridae, but it is present and tightly surrounds the stout aedeagus in *Parafuscoptilia* and *Fuscoptilia*, which might be a synapomorphy for these two genera.

Etymology. The generic name is derived from the Greek *para* = beside, near, and the generic name *Fuscoptilia*, in reference to the similarity of male genitalia in the two genera.

Parafuscoptilia tubuliformis sp. nov.

Figs. 1-2

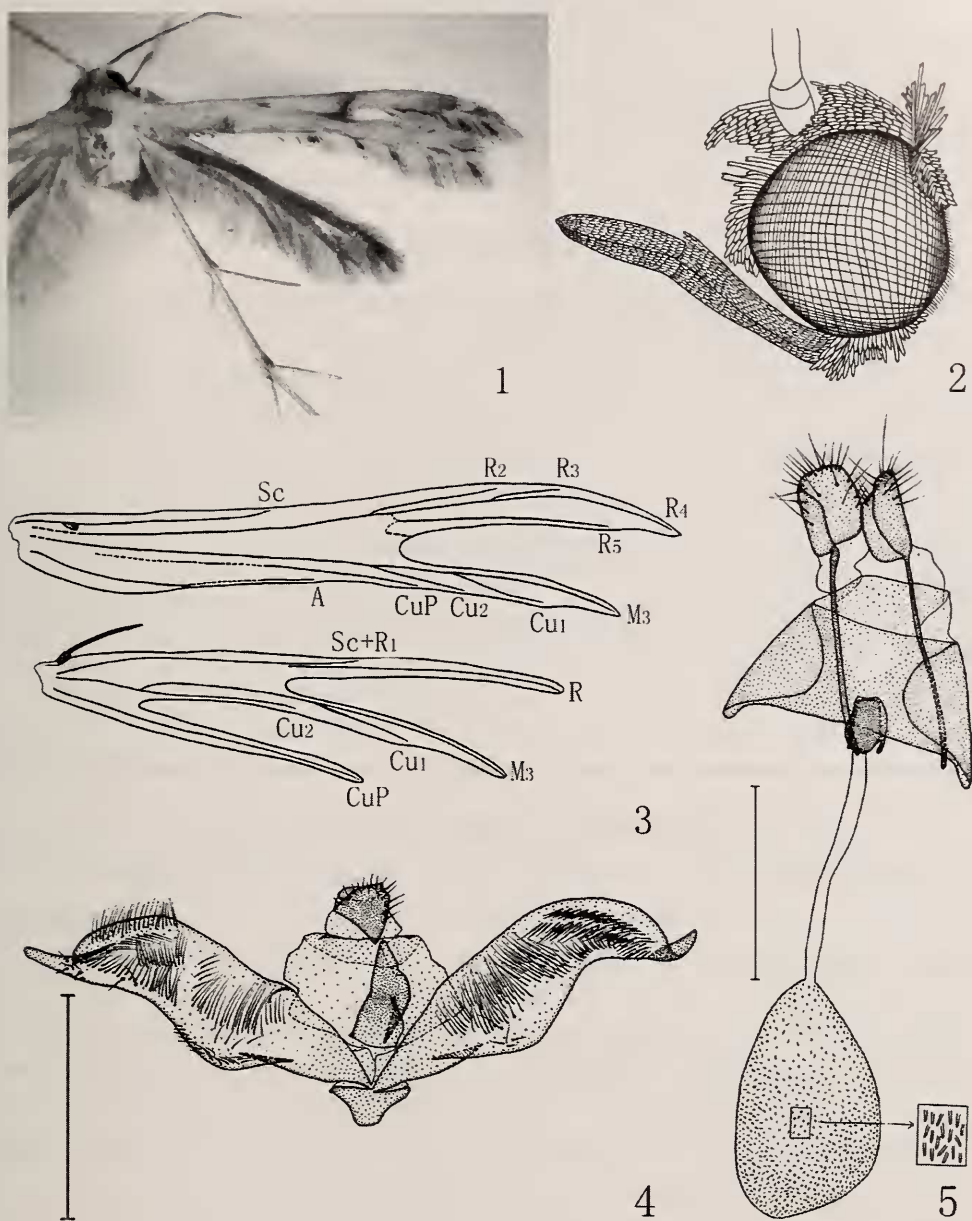
Type Data. Holotype ♂: **China**, Putian County (24.26° N, 119.01° E), Fujian Province, 30. Jul. 1978, genitalia slide No. HSL02307. Paratypes: 5 ♂♂, 2 ♀♀, same locality as holotype, from 30. Jul. 1978 to 4. Aug. 1978. Holotype and 2 ♂♂, 1 ♀ of paratypes deposited at the Institute of Zoology, Chinese Academy of Sciences (IZCAS), Beijing, China; other paratypes deposited at the Department of Biology, Nankai University (DBNU), Tianjin, China.

Description. Head yellowish white to ivory white, roughly scaled. Antenna about 2/5 length of forewing; scape slightly expanded, yellowish white to ivory white; flagellum yellowish white, except for brown end of each segment on dorsal surface, ventral surface with dense cilia. Labial palpus with basal segment yellowish white, slightly enlarged; second segment ivory white, appressedly scaled; apical segment somewhat thin, as long as second segment, pointed. Numerous erect apically bifurcated short scales dispersed along margin of occiput and cervix. Thorax brown, with yellowish-white to ivory-white scales. Tegula buff to ivory white. Legs with outer surface greyish brown to pale brown, inner surface yellowish white to ivory white.

Wingspan 11.0-14.0 mm. Forewing white, with yellowish-white margins; with small, pale brown spot situated at 1/3 near costa; with pale brown spot at basal 1/4 on inner margin; cleft with a pale brown triangular spot; lobes with distal section alternately pale brown and ivory white; apices ivory white; fringe of first lobe yellowish white to ivory white, inner margin mixed with grayish brown; fringe of costal margin of second lobe concolorous with markings of second lobe, but brown near apex, inner margin yellowish brown to ivory white, evenly mixed with brown scales. Hindwing and its fringe evenly grayish brown to grayish white.

Male genitalia (Fig. 4): Uncus arising from distal 1/3 of tegumen ventrally, relatively sclerotized, moderately setose. Tegumen with distal 1/3 tubiform, weakly sclerotized. Valvae more or less S-shaped, densely covered with fine hairs, with apex sharp, somewhat spine-like; costa simple, distal half gently arched except apex; ventral margin protruded medially, distal 1/3 incurved. Manica tightly surrounding aedeagus. Saccus short, rounded at apex. Aedeagus simple, basal 1/2 wide, nearly parallel-sided, distal 1/2 gradually narrowing toward apex, somewhat subtriangular.

Female genitalia (Fig. 5): Papillae anales subrectangular, with long setae. Apophyses posteriores slender, about twice length of 8th sternite. Apophyses anteriores stout, about 1/4 of 8th sternite. Ostium small. Antrum heavily sclerotized, with small process arising from lateral side at anterior 1/3. Ductus bursae membranous, as long as apophyses posteriores. Corpus bursae somewhat pyriform, vesicular, relatively small, shorter than ductus bursae, inner surface densely spinulose.



Figs. 1-5. *Parafuscoptilia tubuliformis* gen. sp. nov.: 1. adult; 2. head; 3. venation; 4. male genitalia (gen. slide no. HSL02307); 5. female genitalia (gen. slide no. HSL02276) (scales = 0.5 mm).

Diagnosis. The new species is related to *Fuscoptilia emarginata* (Snellen, 1884) (Yano, 1963; Arenberger, 1991), but can be easily separated from the latter by the tubiform distal portion of the tegumen, the nearly trapezoidal uncus, the distally tapering valva and the simple basal portion of the aedeagus in the male genitalia; the antrum with a small process arising from the lateral side at anterior 1/3 and the corpus bursae somewhat pyriform in the female genitalia.

Etymology. The new specific name is derived from the Latin *tubuliformis* = tubiform, in reference to the distal shape of the tegumen in the male genitalia.

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